

CLAIMS

1. A flexible resin boot formed from a base resin material of a thermoplastic elastomer resin and having a large port and a small port that are connected with each other via a bellows therebetween, wherein mineral oil is added to the thermoplastic elastomer resin, and said mineral oil is at least one process oil selected from paraffinic oil and naphthenic oil whose aromatic content is 13 % or less.

2. The flexible resin boot as claimed in claim 1, wherein the thermoplastic elastomer resin is a thermoplastic polyester elastomer that comprises hard segments composed of an aromatic dicarboxylic acid and a low-molecular-weight glycol, and soft segments having a molecular weight of from 400 to 4000.

3. The flexible resin boot as claimed in claim 2, wherein the aromatic dicarboxylic acid that forms the hard segments is at least one selected from terephthalic acid and naphthalenedicarboxylic acid, and the low-molecular-weight glycol is at least one selected from ethylene glycol, 1,4-butanediol, 1,4-cyclohexanedimethanol, and dimer glycols.

4. The flexible resin boot as claimed in claim 2, wherein the aromatic dicarboxylic acid that forms the hard segments is terephthalic acid, and the low-molecular-weight glycol is 1,4-butanediol.

5. The flexible resin boot as claimed in claim 2, wherein the soft segments are of polyoxytetramethylene glycol, polyoxypropylene glycol or aliphatic polyester-diols.

6. The flexible resin boot as claimed in claim 2, wherein the soft segments are of polyoxytetramethylene glycol.

7. The flexible resin boot as claimed in claim 6, wherein the polyoxytetramethylene glycol comonomer content of the thermoplastic polyester elastomer falls between 35 and 55 % by weight.

8. The flexible resin boot as claimed in claim 6, wherein the polyoxytetramethylene glycol comonomer content of the thermoplastic polyester elastomer falls between 40 and 50 % by weight.

9. The flexible resin boot as claimed in any of claims 1 to 8, wherein the mineral oil is at least one process oil selected from paraffinic oil and naphthenic oil whose aromatic content is from 0 to 10 %).

10. The flexible resin boot as claimed in claim 1 or 9, wherein at most 5 parts by weight of the process oil is added to 100 parts by weight of the thermoplastic elastomer resin.

11. The flexible resin boot as claimed in claim 1 or 9, wherein the process oil has a number-average molecular weight of from 200 to 2000.

12. The flexible resin boot as claimed in claim 1 or 9, wherein the process oil has a weight-average molecular

*Sue*  
*DG*  
*Control*

weight of from 100 to 2000.

13. The flexible resin boot as claimed in claim 1 or 9, wherein the process oil has a Z-average molecular weight of from 200 to 3000.

14. The flexible resin boot as claimed in claim 1 or 9, wherein the process oil has a kinematic viscosity of from 100 to 1000 mm<sup>2</sup>/sec(25°C) (measured with a B-type viscometer.)<sup>912</sup>

15. A flexible resin boot formed from a base resin material of a thermoplastic elastomer resin and having a large port and a small port that are connected with each other via a bellows therebetween, wherein vegetable oil is added to the thermoplastic elastomer resin.

16. The flexible resin boot as claimed in claim 15, wherein at most 5 parts by weight of the vegetable oil is added to 100 parts by weight of the thermoplastic elastomer resin.

17. The flexible resin boot as claimed in claim 1 or 9, wherein a degree of swelling of the polyester elastomer in the mineral oil is at most 8 % by volume.

18. The flexible resin boot as claimed in claim 1 or 9, wherein a degree of swelling of the polyester elastomer in the mineral oil is at most 6 % by weight.

19. A method for producing a flexible resin boot having a large port and a small port that are connected with each other via a bellows therebetween, from a base resin material of a thermoplastic polyester elastomer, which comprises adding a

liquid additive containing mineral oil or vegetable oil to hot pellets of a thermoplastic polyester elastomer and mixing and stirring them, thereafter further kneading the resulting mixture and extruding it through an extruder to prepare a molding material, and finally molding the molding material into the flexible resin boot.

20. The method for producing a flexible resin boot as claimed in claim 19, wherein a solid additive is added to and mixed with the mixture of the pellets and the liquid additive by stirring them, and the resulting mixture is then further kneaded and extruded to give the molding material.

21. The method for producing a flexible resin boot as claimed in claim 19, wherein the pellets and a solid additive are heated and then mixed by stirring them, and thereafter the liquid additive is added to and mixed with the resulting mixture by further stirring them.

22. The method for producing a flexible resin boot as claimed in any one of claims 19 to 21, wherein the liquid additive is, after having been heated, added to and mixed with the pellets by stirring them.

23. The method for producing a flexible resin boot as claimed in claim 19, wherein the pellets, the liquid additive and a solid additive are all heated, and then mixed together by stirring them to prepare the mixture.

24. The method for producing a flexible resin boot as

claimed in any one of claims 19 to 23, wherein the heating temperature is not lower than 60°C.

25. The method for producing a flexible resin boot as claimed in any one of claims 19 to 23, wherein the heating temperature falls between 70 and 100°C.

26. The flexible resin boot as claimed in claim 1 or 9, wherein a paraffin content of the process oil is from 60 to 78 % and a naphthene content of the process oil is from 20 to 35 %.

ADD DS